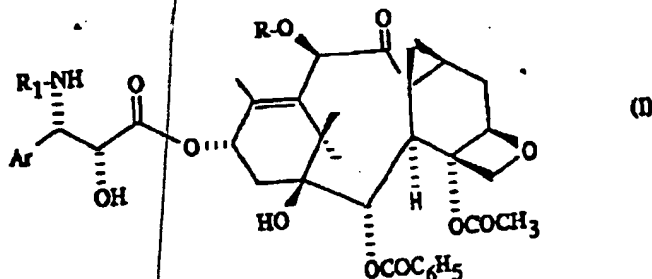


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1. A taxoid of the formula:



in which

R represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical,

5 R<sub>1</sub> represents a benzoyl radical or a radical R<sub>2</sub>-O-CO- in which R<sub>2</sub> represents an alkyl, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, bicycloalkyl, phenyl or heterocyclyl radical, and Ar represents an aryl radical.

2. The taxoid according to Claim 1, wherein:

10 R represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical,

R<sub>1</sub> represents a benzoyl radical or a radical R<sub>2</sub>-O-CO in which R<sub>2</sub> represents:

15 - a straight or branched alkyl radical containing 1 to 8 carbon atoms, an alkenyl radical containing 2 to 8 carbon atoms, an alkynyl radical containing 3 to 8 carbon atoms, a cycloalkyl radical containing 3 to 6 carbon atoms, a cycloalkenyl radical containing 4 to 6 carbon atoms or a bicycloalkyl radical containing 7 to 10 carbon atoms, these radicals being optionally substituted by one or more substituents, which are identical or different, chosen from halogen atoms and hydroxy radicals, alkoxy radicals containing 1 to 4 carbon atoms, dialkylamino radicals in

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51

which each alkyl portion contains 1 to 4 carbon atoms, piperidino radicals, morpholino radicals, 1-piperazinyl radicals (optionally substituted at position 4 by an alkyl radical containing 1 to 4 carbon atoms or by a phenylalkyl radical whose alkyl portion contains 1 to 4 carbon atoms), cycloalkyl radicals containing 3 to 6 carbon atoms, cycloalkenyl radicals containing 4 to 6 carbon atoms, phenyl radicals, cyano radicals, carboxy radicals or alkoxy carbonyl radicals whose alkyl portion contains 1 to 4 carbon atoms,

- or a phenyl radical optionally substituted by one or more radicals, which are identical or different, chosen from alkyl radicals containing 1 to 4 carbon atoms or alkoxy radicals containing 1 to 4 carbon atoms,

- or a saturated or unsaturated 5- or 6-membered nitrogen-containing heterocyclyl radical optionally substituted by one or more alkyl radicals containing 1 to 4 carbon atoms,

it being understood that the cycloalkyl, cycloalkenyl or bicycloalkyl radicals may be optionally substituted by one or more alkyl radicals containing 1 to 4 carbon atoms, and

Ar represents a phenyl or  $\alpha$ - or  $\beta$ -naphthyl radical optionally substituted by one or more atoms or radicals, chosen from halogen atoms (fluorine, chlorine, bromine, or iodine) and alkyl, alkenyl, alkynyl, aryl, arylalkyl, alkoxy, alkylthio, aryloxy, arylthio, hydroxy, hydroxyalkyl, mercapto, formyl, acyl, acylamino, aroylamino, alkoxy carbonylamino, amino, alkylamino, dialkylamino, carboxy, alkoxy carbonyl, carbamoyl,

52

diakylcarbamoyl, cyano, nitro and trifluoromethyl radicals, it being understood that the alkyl radicals and the alkyl portions of the other radicals contain 1 to 4 carbon atoms, that the alkenyl and alkynyl radicals contain 2 to 8 carbon atoms and that the aryl radicals are phenyl or  $\alpha$ - or  $\beta$ -naphthyl radicals or alternatively Ar represents a 5-membered aromatic heterocyclic radical containing one or more atoms, which are identical or different, chosen from nitrogen, oxygen or sulphur atoms, optionally substituted by one or more substituents, which are identical or different, chosen from halogen atoms (fluorine, chlorine, bromine or iodine) and alkyl radicals containing 1 to 4 carbon atoms, aryl radicals containing 6 to 10 carbon atoms, alkoxy radicals containing 1 to 4 carbon atoms, aryloxy radicals containing 6 to 10 carbon atoms, amino radicals, alkylamino radicals containing 1 to 4 carbon atoms, dialkylamino radicals in which each alkyl portion contains 1 to 4 carbon atoms, acylamino radicals in which the acyl portion contains 1 to 4 carbon atoms, alkoxycarbonylamino radicals containing 1 to 4 carbon atoms, acyl radicals containing 1 to 4 carbon atoms, arylcarbonyl radicals in which the aryl portion contains 6 to 10 carbon atoms, cyano radicals, carboxy radicals, carbamoyl radicals, alkylcarbamoyl radicals in which the alkyl portion contains 1 to 4 carbon atoms, dialkylcarbamoyl radicals in which each alkyl portion contains 1 to 4 carbon atoms or alkoxycarbonyl radicals in which the alkoxy portion contains 1 to 4 carbon atoms.

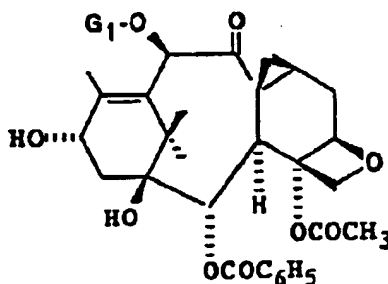
3. The taxoid according to Claim 1, wherein R represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical, R<sub>1</sub>

53

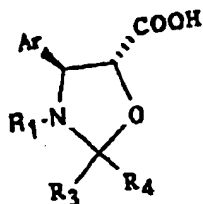
represents a benzoyl radical and Ar represents an aryl radical.

4. The taxoid according to Claim 1, wherein R represents a hydrogen atom or an acetyl radical, R<sub>1</sub> represents a benzoyl radical and Ar represents a phenyl radical.

5. Process for the preparation of a product according to any one of Claims 1, 2, 3 or 4, comprising esterifying a product of the formula:



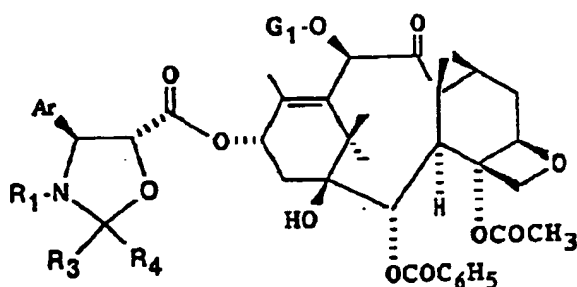
in which G<sub>1</sub> represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical or a hydroxy-protecting group, with an acid of the formula:



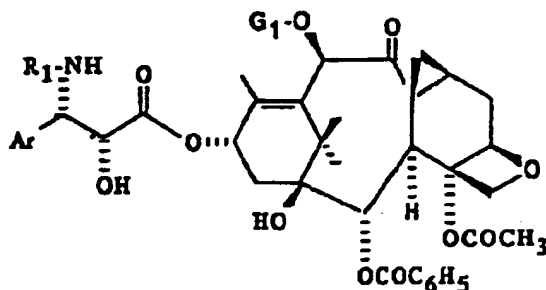
in which Ar and R<sub>1</sub> are defined as in one of Claims 1, 2, 3 or 4, R<sub>3</sub> represents a hydrogen atom or an alkoxy radical containing 1 to 4 carbon atoms or an optionally substituted aryl radical and R<sub>4</sub>

54

represents a hydrogen atom, to give a product of the formula:



in which Ar, R and R<sub>1</sub> are defined as in one of Claims 1, 2, 3 or 4, R<sub>3</sub>, R<sub>4</sub> and G<sub>1</sub> are defined as above, treating this product in acidic medium to give a product of the formula:



- 5 in which Ar, R<sub>1</sub> and G<sub>1</sub> are defined as above, and then optionally replacing the protecting group G<sub>1</sub> by a hydrogen atom and isolating the product obtained.

6. Process according to Claim 5, wherein the esterification is carried out by means of the free acid, the procedure being carried out in the presence of a condensing agent chosen from carbodiimides and reactive carbonates and an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, ketones, esters, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between -10 and 90°C.

7. Process according to Claim 5, wherein the esterification by means of the anhydride is carried out in the presence of an activating agent chosen from aminopyridines in an

55

organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 90°C.

5 8. Process according to Claim 5, wherein the esterification is carried out by means of a halide or an anhydride with an aliphatic or aromatic acid, optionally prepared in situ, the procedure being carried out in the presence of a base chosen from tertiary aliphatic amines in an organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic  
10 hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 80°C.

9. Process according to Claim 5, wherein the acid treatment is carried out by means of an inorganic or organic acid in an organic solvent at a temperature of between -10 and 60°C.

15 10. Process according to Claim 9, wherein the acid is chosen from hydrochloric, sulphuric, acetic, methanesulphonic, trifluoromethanesulphonic and p-toluenesulphonic acids, used alone or in the form of a mixture.

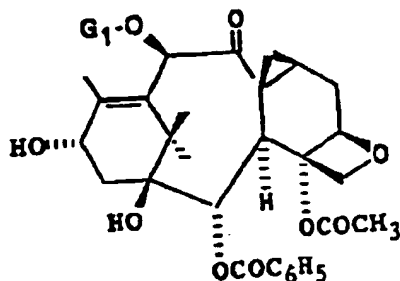
20 11. Process according to Claim 9, wherein the solvent is chosen from alcohols, ethers, esters, halogenated aliphatic hydrocarbons, aromatic hydrocarbons and nitriles.

25 12. Process according to Claim 5, wherein the replacement by a hydrogen atom of the protecting group G<sub>1</sub>, when it represents a 2,2,2-trichloroethoxycarbonyl or 2-(2-trichloromethylpropoxy)carbonyl radical, is carried out by treatment using zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric

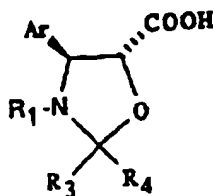
56

acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl acetate or n-butyl acetate in the presence of zinc optionally combined with copper, and, when it represents an alkoxyacetyl radical, by treatment in alkaline medium by means of ammonia in aqueous-alcoholic medium at a temperature close to 20°C or by treatment using a zinc halide in methanol at a temperature close to 20°C.

12. Process for the preparation of a product according to any one of Claims 1, 2, 3 or 4, comprising esterifying a product of the formula:



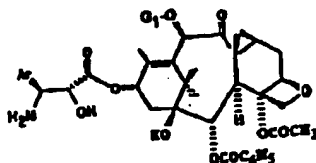
in which G<sub>1</sub> represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical or a hydroxy-protecting group, by means of an acid of the formula:



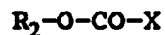
in which Ar and R<sub>1</sub> are defined as in one of Claims 1, 2, 3 or 4 and R<sub>3</sub> and R<sub>4</sub>, which are identical or different, represent an alkyl radical containing 1 to 4 carbon atoms or an aralkyl radical whose alkyl portion contains 1 to 4 carbon atoms or an aryl radical, or alternatively R<sub>3</sub> represents a trihalomethyl radical

57

or a phenyl radical substituted by a trihalomethyl radical and  $R_4$  represents a hydrogen atom, or alternatively  $R_3$  and  $R_4$  form, together with the carbon atom to which they are attached, a 4- to 7-membered ring, to give, after treating in acidic medium, a product of the formula:



in which Ar is defined as in one of Claims 1, 2, 3 or 4 and  $G_1$  is defined as above, and acylating the product by means of benzoyl chloride or a reactive derivative of the formula:



in which  $R_2$  is defined as in one of Claims 1, 2, 3 or 4 and X represents a halogen atom or a residue  $-O-R_2$  or  $-O-CO-O-R_2$ , and then replacing the protecting group  $G_1$ , if necessary, by a hydrogen atom, and isolating the product obtained.

14. Process according to Claim 13, wherein the esterification is carried out by means of the free acid, the procedure being carried out in the presence of a condensing agent chosen from carbodiimides and reactive carbonates and an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, ketones, esters, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between  $-10$  and  $90^\circ\text{C}$ .

15. Process according to Claim 13, wherein the esterification by means of the anhydride is carried out in the presence of an activating agent chosen from aminopyridines in an



58

organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 90°C.

5 16. Process according to Claim 13, wherein the esterification is carried out by means of a halide or an anhydride with an aliphatic or aromatic acid, optionally prepared in situ, the procedure being carried out in the presence of a base chosen from tertiary aliphatic amines in an organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic  
10 hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 80°C.

17. Process according to Claim 13, wherein the acid treatment is carried out by means of an inorganic or organic acid in an organic solvent at a temperature of between 0 and 50°C.

15 18. Process according to Claim 17, wherein the acid is chosen from hydrochloric, sulphuric and formic acids.

19. Process according to Claim 17, wherein the solvent is chosen from alcohols containing 1 to 3 carbon atoms.

20 20. Process according to Claim 13, wherein the acylation is carried out in an inert organic solvent in the presence of an inorganic or organic base.

21. Process according to Claim 20, wherein the inert organic solvent is chosen from esters and halogenated aliphatic hydrocarbons.

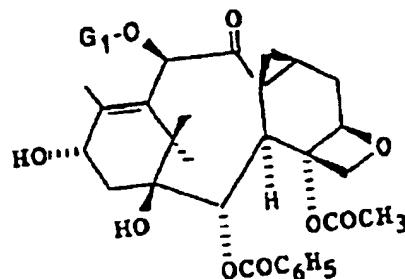
25 22. Process according to one of Claims 19, 20 or 21, wherein the procedure is carried out at a temperature of between 0 and 50°C.

23. Process according to Claim 13, wherein the replacement

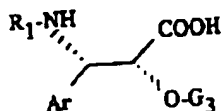
59

by a hydrogen atom of the protecting group  $G_1$ , when it represents a 2,2,2-trichloroethoxycarbonyl or 2-(2-trichloromethylpropoxy)carbonyl radical, is carried out by treatment using zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl acetate or n-butyl acetate in the presence of zinc optionally combined with copper, or, when it represents an alkoxy acetyl radical, by treatment in alkaline medium by means of ammonia in aqueous-alcoholic medium at a temperature close to 20°C or by treatment using a zinc halide in methanol at a temperature close to 20°C.

24. Process for the preparation of a product according to any one of Claims 1, 2, 3 or 4, comprising esterifying a product of the formula:

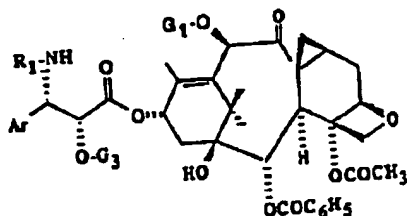


in which  $G_1$  represents a hydrogen atom or an acetyl radical or a hydroxy-protecting group, by means of an acid of the formula:



60

in which Ar and R<sub>1</sub> are defined as in one of Claims 1, 2, 3 or 4 and G<sub>3</sub> represents a hydroxy-protecting group, or of an activated derivative of this acid, to give a product of the formula:



in which Ar, R<sub>1</sub>, G<sub>1</sub> and G<sub>3</sub> are defined as above, replacing the protecting groups G<sub>3</sub> and optionally G<sub>1</sub> by a hydrogen atom, and isolating the product obtained.

25. Process according to Claim 24, wherein the esterification is carried out by means of the free acid, the procedure being carried out in the presence of a condensing agent chosen from carbodiimides and reactive carbonates and an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, ketones, esters, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between -10 and 90°C.

26. Process according to Claim 24, wherein the esterification by means of the anhydride is carried out in the presence of an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 90°C.

27. Process according to Claim 24, wherein the esterification is carried out by means of a halide or an anhydride with an aliphatic or aromatic acid, optionally prepared

61

in situ, the procedure being carried out in the presence of a base chosen from tertiary aliphatic amines in an organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 80°C.

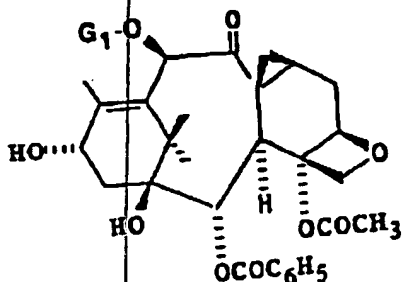
28. Process according to Claim 24, wherein the replacement of the protecting groups  $G_1$  and  $G_2$  by hydrogen atoms is carried out by treatment with zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl acetate or n-butyl acetate in the presence of zinc optionally combined with copper, when  $G_1$  and  $G_2$  represent a 2,2,2-trichloroethoxycarbonyl or 2-(2-trichloromethylpropoxy)carbonyl radical, or by treatment in acidic medium such as for example hydrochloric acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms (methanol, ethanol, propanol or isopropanol) or aqueous hydrofluoric acid at a temperature of between 0 and 40°C when  $G_2$  represents a silylated radical or an acetal residue, followed by the replacement of the protecting group  $G_1$  by treatment using zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl acetate or n-butyl acetate in the presence of zinc optionally

62

combined with copper, or, when  $G_1$  represents an alkoxyacetyl radical, by treatment in alkaline medium by means of ammonia in aqueous-alcoholic medium at a temperature close to  $20^\circ\text{C}$  or by treatment using a zinc halide in methanol at a temperature close to  $20^\circ\text{C}$ .

29. Process according to Claim 24, wherein when  $G_2$  represents a radical  $-\text{CH}_2-\text{Ph}$ , the replacement of the group by a hydrogen atom is carried out by hydrogenolysis, after replacing ~~the protecting group  $G_1$  under the condition of Claim 28.~~

30. A taxoid of the formula:



in which  $G_1$  represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical or a hydroxy-protecting group.

31. Pharmaceutical composition comprising at least one product according to one of Claims 1, 2, 3 or 4, in combination with one or more pharmaceutically acceptable, inert or physiologically active, products.

32. A method for treating mammalian tumors comprising administering to a mammal an effective amount of at least one compound according to any one of Claims 1, 2, 3 or 4.

33. A method for treating a pathological condition in a host wherein said pathological condition is associated with abnormal cell proliferation said method comprising administering to said host an effective amount of at least one compound

63  
according to any one of Claims 1, 2, 3 or 4.

34. A method according to Claim 33, wherein the abnormal cells are malignant cells.

5 35. A method according to Claim 33, wherein the abnormal cells are non-malignant.

36. A method according to Claim 34 or Claim 35, wherein said pathological condition comprises abnormal cellular proliferation of malignant or non-malignant cells of various tissues and/or organs including, muscle, bone or connective  
10 tissues, skin, brain, lungs, sex organs, lymphatic or renal systems, mammary or blood cells, liver, digestive tract, pancreas and thyroid or adrenal glands.

37. A method according to Claim 33, wherein the pathological condition is psoriasis, solid tumors, cancer of the  
15 ovary, breast, brain, prostate, colon, stomach, kidney or testicles, Kaposi's sarcoma, cholangioma, chorioma, neuroblastoma, Wilms' tumor, Hodgkin's disease, melanomas, multiple myelomas, lymphatic leukaemia, and acute or chronic granulocytic lymphomas.

20 38. A method according to Claim 33, wherein the pathological condition is ovarian cancer.

39. A method according to any one of Claims 32 or 33, wherein the treatment is performed concurrently with at least one other therapeutic treatment.

25 40. A method according to Claim 39, wherein the other therapeutic treatment comprises antineoplastic drugs, monoclonal, antibodies, immunotherapies, radiotherapies, or biological response modifiers.

64

41. A method according to Claim 40, wherein the response modifiers comprise lymphokines and cytokines, including interleukins, interfeons ( $\alpha$ ,  $\beta$  or  $\sigma$ ) and TNF.

5 42. A method according to Claim 40, wherein the antineoplastic drugs comprise alkylating agents like nitrogen mustards such as mechlorethamine, cyclophosphamide, melphalan and chlorambucil, alkyl sulphates such as busulfan, nitrosoureas such as carmustine, lomustine, semustine and streptozocin, triazenes such as dacarbazine, antimetabolites such as folic acid analogues  
10 like methotrexate, pyrimidine analogues such as fluorouracil and cytarabine, purine analogues such as mercaptopurine and thioguanine, natural products like vinca alkaloids such as vinblastine, vincristine and vindesine, epipodophyllotoxins such as etoposide and teniposide, antibiotics such as dactinomycin, daunorubicin, doxorubicin, bleomycin, plicamycin and mitomycin,  
15 enzymes such a L-asparaginase, various agents such as coordination complexes of platinum like cisplatin, substituted ureas like hydroxyurea, methylhydrazine derivatives such as procarbazine, adrenocortical suppressants such as mitotane and  
20 aminogluthethimide, hormones and antagonists such as adrenocorticosteroids such as prednisone, progestins such as hydroxyprogesterone caproate, methoxyprogesterone acetate and megestrol acetate, oestrogens such as diethylstilbestrol and ethynylestradiol, antiestrogens such as tamoxifen, and androgens  
25 such as testosterone propionate and fluoxymesterone.

43. A pharmaceutical composition according to Claim 31, wherein the composition is suitable for parenteral administration.

65

44. A pharmaceutical composition according to Claim 43, wherein the composition is suitable for intravenous, intraperitoneal, intramuscular or subcutaneous administration.

45. A pharmaceutical composition according to Claim 31, comprising a pharmaceutically acceptable adjuvants, carriers or excipients.

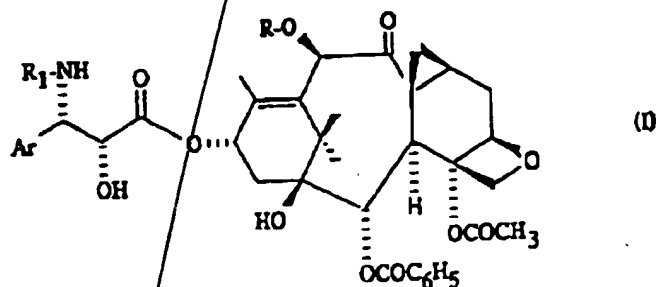
46. A pharmaceutical composition according to Claim 45, wherein the support comprises a diluent, sterile aqueous media and non-toxic solvents.

47. A pharmaceutical composition according to Claim 31, wherein the composition is an aqueous solution, an aqueous suspension, and injectable solution.

48. A pharmaceutical composition according to Claim 47, wherein the composition comprises at least one emulsifying agent, colorant, preservative or stabilizer.

49. A pharmaceutical composition according to Claim 43, wherein the composition is an aqueous or non-aqueous solution or suspension.

50. A taxoid of the formula:



in which

R represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical,

R<sub>1</sub> represents a radical R<sub>2</sub>-O-CO- in which R<sub>2</sub> represents an alkyl



66

radical, and

Ar represents an aryl radical.

51. A taxoid according to Claim 50, wherein:

R represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical,

R<sub>1</sub> represents a radical R<sub>2</sub>-O-CO in which R<sub>2</sub> represents:

- a straight or branched alkyl radical containing 1 to 8 carbon atoms optionally substituted by one or more substituents, which are identical or different, chosen from halogen atoms and hydroxy radicals, alkoxy radicals containing 1 to 4 carbon atoms, dialkylamino radicals in which each alkyl portion contains 1 to 4 carbon atoms, piperidino radicals, morpholino radicals, 1-piperazinyl radicals (optionally substituted at position 4 by an alkyl radical containing 1 to 4 carbon atoms or by a phenylalkyl radical whose alkyl portion contains 1 to 4 carbon atoms), cycloalkyl radicals containing 3 to 6 carbon atoms, cycloalkenyl radicals containing 4 to 6 carbon atoms, phenyl radicals, cyano radicals, carboxy radicals or alkoxycarbonyl radicals whose alkyl portion contains 1 to 4 carbon atoms,

Ar represents a phenyl or  $\alpha$ - or  $\beta$ -naphthyl radical optionally substituted by one or more atoms or radicals, chosen from halogen atoms (fluorine, chlorine, bromine, or iodine) and alkyl, alkenyl, alkynyl, aryl, arylalkyl, alkoxy, alkylthio, aryloxy, arylthio, hydroxy, hydroxyalkyl, mercapto, formyl, acyl, acylamino, aroylamino, alkoxycarbonylamino, amino, alkylamino, dialkylamino, carboxy, alkoxycarbonyl, carbamoyl,

67

diakylcarbamoyl, cyano, nitro and trifluoromethyl radicals, it being understood that the alkyl radicals and the alkyl portions of the other radicals contain 1 to 4 carbon atoms, that the alkenyl and alkynyl radicals contain 2 to 8 carbon atoms and that the aryl radicals are phenyl or  $\alpha$ - or  $\beta$ -naphthyl radicals or alternatively Ar represents a 5-membered aromatic heterocyclic radical containing one or more atoms, which are identical or different, chosen from nitrogen, oxygen or sulphur atoms, optionally substituted by one or more substituents, which are identical or different, chosen from halogen atoms (fluorine, chlorine, bromine or iodine) and alkyl radicals containing 1 to 4 carbon atoms, aryl radicals containing 6 to 10 carbon atoms, alkoxy radicals containing 1 to 4 carbon atoms, aryloxy radicals containing 6 to 10 carbon atoms, amino radicals, alkylamino radicals containing 1 to 4 carbon atoms, dialkylamino radicals in which each alkyl portion contains 1 to 4 carbon atoms, acylamino radicals in which the acyl portion contains 1 to 4 carbon atoms, alkoxycarbonylamino radicals containing 1 to 4 carbon atoms, acyl radicals containing 1 to 4 carbon atoms, arylcarbonyl radicals in which the aryl portion contains 6 to 10 carbon atoms, cyano radicals, carboxy radicals, carbamoyl radicals, alkylcarbamoyl radicals in which the alkyl portion contains 1 to 4 carbon atoms, dialkylcarbamoyl radicals in which each alkyl portion contains 1 to 4 carbon atoms or alkoxycarbonyl radicals in which the alkoxy portion contains 1 to 4 carbon atoms.

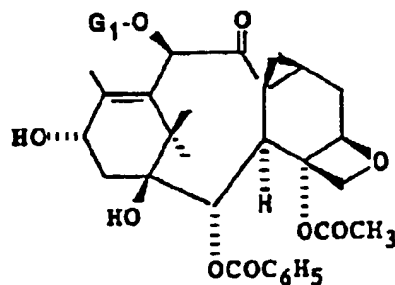
52. A taxoid according to Claim 50, wherein R represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical, R<sub>1</sub>

68

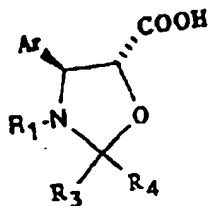
represents a radical  $R_2-O-CO-$  in which R represents a t-butyl radical and Ar represents an aryl radical.

53. A taxoid according to Claim 50, wherein R represents a hydrogen atom or an acetyl and  $R_1$  represents a radical  $R_2-O-CO-$  in which  $R_2$  represents a t-butyl radical and Ar represents a phenyl radical.

54. Process for the preparation of a product according to any one of Claims 50, 51, 52 or 53, comprising esterifying a product of the formula:



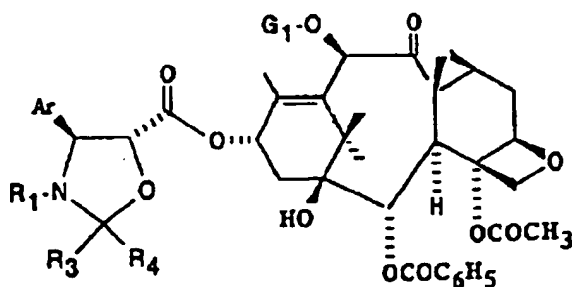
in which  $G_1$  represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical or a hydroxy-protecting group, with an acid of the formula:



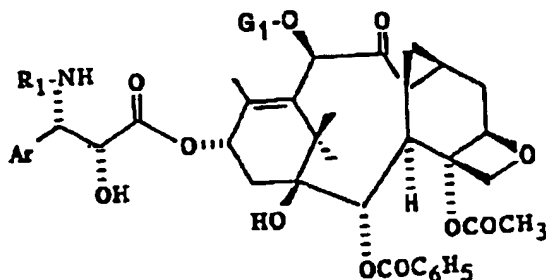
in which Ar and  $R_1$  are defined as in one of Claims 50, 51, 52, or 53,  $R_3$  represents a hydrogen atom or an alkoxy radical containing 1 to 4 carbon atoms or an optionally substituted aryl radical and

69

$R_4$  represents a hydrogen atom, to give a product of the formula:



in which Ar, R and  $R_1$  are defined as in one of Claims 50, 51, 52, or 53,  $R_3$ ,  $R_4$  and  $G_1$  are defined as above, treating this product in acidic medium to give a product of the formula:



5 in which Ar,  $R_1$  and  $G_1$  are defined as above, and then optionally replacing the protecting group  $G_1$  by a hydrogen atom and isolating the product obtained.

10 55. Process according to Claim 53, wherein the esterification is carried out by means of the free acid, the procedure being carried out in the presence of a condensing agent chosen from carbodiimides and reactive carbonates and an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, ketones, esters, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic  
15 hydrocarbons at a temperature of between -10 and 90°C.

56. Process according to Claim 53, wherein the esterification by means of the anhydride is carried out in the presence of an activating agent chosen from aminopyridines in an

70

organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 90°C.

57. Process according to Claim 53, wherein the esterification is carried out by means of a halide or an anhydride with an aliphatic or aromatic acid, optionally prepared in situ, the procedure being carried out in the presence of a base chosen from tertiary aliphatic amines in an organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 80°C.

58. Process according to Claim 53, wherein the acid treatment is carried out by means of an inorganic or organic acid in an organic solvent at a temperature of between -10 and 60°C.

59. Process according to Claim 57, wherein the acid is chosen from hydrochloric, sulphuric, acetic, methanesulphonic, trifluoromethanesulphonic and p-toluenesulphonic acids, used alone or in the form of a mixture.

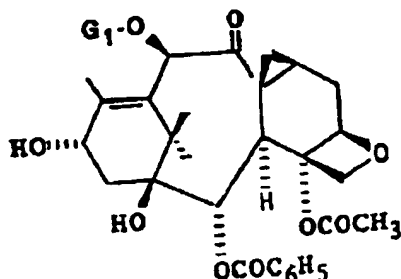
60. Process according to Claim 57, wherein the solvent is chosen from alcohols, ethers, esters, halogenated aliphatic hydrocarbons, aromatic hydrocarbons and nitriles.

61. Process according to Claim 53, wherein the replacement by a hydrogen atom of the protecting group G<sub>1</sub>, when it represents a 2,2,2-trichloroethoxycarbonyl or 2-(2-trichloromethylpropoxy)carbonyl radical, is carried out by treatment using zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric

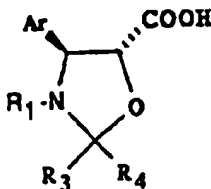
71

acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl acetate or n-butyl acetate in the presence of zinc optionally combined with copper, and, when it represents an alkoxyacetyl radical, by treatment in alkaline medium by means of ammonia in aqueous-alcoholic medium at a temperature close to 20°C or by treatment using a zinc halide in methanol at a temperature close to 20°C.

62. Process for the preparation of a product according to any one of Claims 50, 51, 52 or 53, comprising esterifying a product of the formula:



in which  $G_1$  represents a hydrogen atom or an acetyl, alkoxyacetyl or alkyl radical or a hydroxy-protecting group, by means of an acid of the formula:

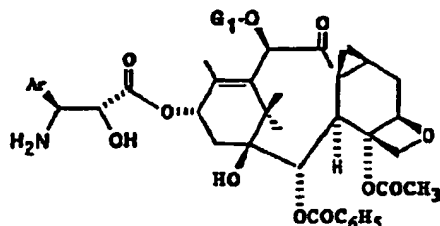


in which Ar and  $R_1$  are defined as in one of Claims 50, 51, 52, or 53 and  $R_3$  and  $R_4$ , which are identical or different, represent an alkyl radical containing 1 to 4 carbon atoms or an aralkyl radical whose alkyl portion contains 1 to 4 carbon atoms or an aryl radical, or alternatively  $R_3$  represents a trihalomethyl

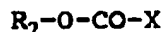
72

radical or a phenyl radical substituted by a trihalomethyl radical and  $R_4$  represents a hydrogen atom, or alternatively  $R_3$  and  $R_4$  form, together with the carbon atom to which they are attached, a 4- to 7-membered ring, to give, after treating in

5 acidic medium, a product of the formula:



in which Ar is defined as in one of Claims 50, 51, 52 or 53 and  $G_1$  is defined as above, and acylating the product by means of benzoyl chloride or a reactive derivative of the formula:



10 in which  $R_2$  is defined as in one of Claims 50, 51, 52 or 53 and X represents a halogen atom or a residue  $-O-R_2$  or  $-O-CO-O-R_2$ , and then replacing the protecting group  $G_1$ , if necessary, by a hydrogen atom, and isolating the product obtained.

63. Process according to Claim 61, wherein the

15 esterification is carried out by means of the free acid, the procedure being carried out in the presence of a condensing agent chosen from carbodiimides and reactive carbonates and an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, ketones, esters, nitriles, aliphatic

20 hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between  $-10$  and  $90^\circ\text{C}$ .

64. Process according to Claim 61, wherein the esterification by means of the anhydride is carried out in the presence of an activating agent chosen from aminopyridines in an

73

organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 90°C.

5 65. Process according to Claim 61, wherein the esterification is carried out by means of a halide or an anhydride with an aliphatic or aromatic acid, optionally prepared in situ, the procedure being carried out in the presence of a base chosen from tertiary aliphatic amines in an organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic  
10 hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 80°C.

66. Process according to Claim 61, wherein the acid treatment is carried out by means of an inorganic or organic acid in an organic solvent at a temperature of between 0 and 50°C.

15 67. Process according to Claim 65, wherein the acid is chosen from hydrochloric, sulphuric and formic acids.

68. Process according to Claim 65, wherein the solvent is chosen from alcohols containing 1 to 3 carbon atoms.

20 69. Process according to Claim 61, wherein the acylation is carried out in an inert organic solvent in the presence of an inorganic or organic base.

70. Process according to Claim 68, wherein the inert organic solvent is chosen from esters and halogenated aliphatic hydrocarbons.

25 71. Process according to one of Claims 67, 68 or 69, wherein the procedure is carried out at a temperature of between 0 and 50°C.

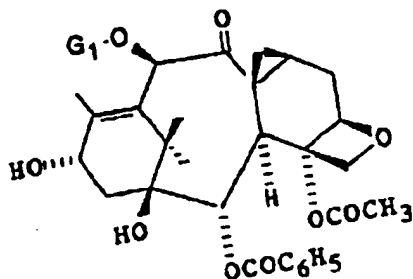
72. Process according to Claim 61, wherein the replacement



74

by a hydrogen atom of the protecting group  $G_1$ , when it represents a 2,2,2-trichloroethoxycarbonyl or 2-(2-trichloromethylpropoxy)carbonyl radical, is carried out by treatment using zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl acetate or n-butyl acetate in the presence of zinc optionally combined with copper, or, when it represents an alkoxy acetyl radical, by treatment in alkaline medium by means of ammonia in aqueous-alcoholic medium at a temperature close to 20°C or by treatment using a zinc halide in methanol at a temperature close to 20°C.

73. Process for the preparation of a product according to any one of Claims 50, 51, 52 or 53, comprising esterifying a product of the formula:

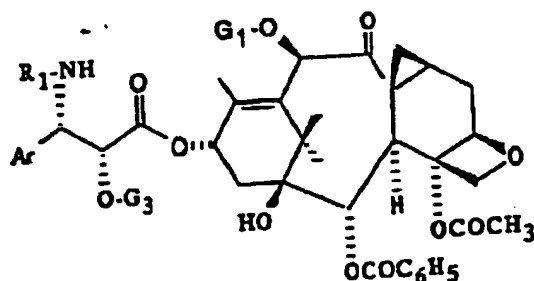


in which  $G_1$  represents a hydrogen atom or an acetyl radical or a hydroxy-protecting group, by means of an acid of the formula:



75

in which Ar and R<sub>1</sub> are defined as in one of Claims 50, 51, 52 or 53 and G<sub>3</sub> represents a hydroxy-protecting group, or of an activated derivative of this acid, to give a product of the formula:



5 in which Ar, R<sub>1</sub>, G<sub>1</sub> and G<sub>3</sub> are defined as above, replacing the protecting groups G<sub>3</sub> and optionally G<sub>1</sub> by a hydrogen atom, and isolating the product obtained.

74. Process according to Claim 72, wherein the esterification is carried out by means of the free acid, the  
10 procedure being carried out in the presence of a condensing agent chosen from carbodiimides and reactive carbonates and an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, ketones, esters, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic  
15 hydrocarbons at a temperature of between -10 and 90°C.

75. Process according to Claim 72, wherein the esterification by means of the anhydride is carried out in the presence of an activating agent chosen from aminopyridines in an organic solvent chosen from ethers, esters, ketones, nitriles,  
20 aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 90°C.

76. Process according to Claim 72, wherein the esterification is carried out by means of a halide or an

76

anhydride with an aliphatic or aromatic acid, optionally prepared in situ, the procedure being carried out in the presence of a base chosen from tertiary aliphatic amines in an organic solvent chosen from ethers, esters, ketones, nitriles, aliphatic hydrocarbons, halogenated aliphatic hydrocarbons and aromatic hydrocarbons at a temperature of between 0 and 80°C.

77. Process according to Claim 72, wherein the replacement of the protecting groups  $G_1$  and  $G_3$  by hydrogen atoms is carried out by treatment with zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl acetate or n-butyl acetate in the presence of zinc optionally combined with copper, when  $G_1$  and  $G_3$  represent a 2,2,2-trichloroethoxycarbonyl or 2-(2-trichloromethylpropoxy)carbonyl radical, or by treatment in acidic medium such as for example hydrochloric acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms (methanol, ethanol, propanol or isopropanol) or aqueous hydrofluoric acid at a temperature of between 0 and 40°C when  $G_3$  represents a silylated radical or an acetal residue, followed by the replacement of the protecting group  $G_1$  by treatment using zinc, optionally combined with copper, in the presence of acetic acid at a temperature of between 30 and 60°C or by means of an inorganic or organic acid such as hydrochloric acid or acetic acid in solution in an aliphatic alcohol containing 1 to 3 carbon atoms or an aliphatic ester such as ethyl acetate, isopropyl

77

acetate or n-butyl acetate in the presence of zinc optionally combined with copper, or, when  $G_1$  represents an alkoxyacetyl radical, by treatment in alkaline medium by means of ammonia in aqueous-alcoholic medium at a temperature close to 20°C or by treatment using a zinc halide in methanol at a temperature close to 20°C.

78. Process according to Claim 72, wherein when  $G_3$  represents a radical  $-CH_2-Ph$ , the replacement of the group by a hydrogen atom is carried out by hydrogenolysis, after replacing the protecting group  $G_1$  under the condition of Claim 76.

79. Pharmaceutical composition comprising at least one product according to one of Claims 50, 51, 52 and 53<sup>and 102</sup> in combination with one or more pharmaceutically acceptable, inert or physiologically active, products.

80. A method for treating mammalian tumors comprising administering to a mammal an effective amount of at least one compound according to any one of Claims 50, 51, 52 and 53<sup>and 102</sup>.

81. A method for treating a pathological condition in a host wherein said pathological condition is associated with abnormal cell proliferation said method comprising administering to said host an effective amount of at least one compound according to any one of Claims 50, 51, 52 and 53<sup>and 102</sup>.

82. A method according to Claim 81, wherein the abnormal cells are malignant cells.

83. A method according to Claim 81, wherein the abnormal cells are non-malignant.

84. A method according to Claim 82 or Claim 83, wherein said pathological condition comprises abnormal cellular

78

proliferation of malignant or non-malignant cells of various tissues and/or organs including, muscle, bone or connective tissues, skin, brain, lungs, sex organs, lymphatic or renal systems, mammary or blood cells, liver, digestive tract, pancreas and thyroid or adrenal glands.

85. A method according to Claim 81, wherein the pathological condition is psoriasis, solid tumors, cancer of the ovary, breast, brain, prostate, colon, stomach, kidney or testicles, Kaposi's sarcoma, cholangioma, chorioma, neuroblastoma, Wilms' tumor, Hodgkin's disease, melanomas, multiple myelomas, lymphatic leukaemia, and acute or chronic granulocytic lymphomas.

86. A method according to Claim 81, wherein the pathological condition is ovarian cancer.

87. A method according to any one of Claims 80 or 81, wherein the treatment is performed concurrently with at least one other therapeutic treatment.

88. A method according to Claim 87, wherein the other therapeutic treatment comprises antineoplastic drugs, monoclonal, antibodies, immunotherapies, radiotherapies, or biological response modifiers.

89. A method according to Claim 88, wherein the response modifiers comprise lymphokines and cytokines, including interleukins, interferons ( $\alpha$ ,  $\beta$  or  $\sigma$ ) and TNF.

90. A method according to Claim 88, wherein the antineoplastic drugs comprise alkylating agents like nitrogen mustards such as mechlorethamine, cyclophosphamide, melphalan and chlorambucil, alkyl sulphates such as busulfan, nitrosoureas such

79

as carmustine, lomustine, semustine and streptozocin, triazenes such as dacarbazine, antimetabolites such as folic acid analogues like methotrexate, pyrimidine analogues such as fluorouracil and cytarabine, purine analogues such as mercaptopurine and thioguanine, natural products like vinca alkaloids such as vinblastine, vincristine and vindesine, epipodophyllotoxins such as etoposide and teniposide, antibiotics such as dactinomycin, daunorubicin, doxorubicin, bleomycin, plicamycin and mitomycin, enzymes such as L-asparaginase, various agents such as coordination complexes of platinum like cisplatin, substituted ureas like hydroxyurea, methylhydrazine derivatives such as procarbazine, adrenocortical suppressants such as mitotane and aminoglutethimide, hormones and antagonists such as adrenocorticosteroids such as prednisone, progestins such as hydroxyprogesterone caproate, methoxyprogesterone acetate and megestrol acetate, oestrogens such as diethylstilbestrol and ethynylestradiol, antiestrogens such as tamoxifen, and androgens such as testosterone propionate and fluoxymesterone.

91. A pharmaceutical composition according to Claim 79, wherein the composition is suitable for parenteral administration.

92. A pharmaceutical composition according to Claim 91, wherein the composition is suitable for intravenous, intraperitoneal, intramuscular or subcutaneous administration.

93. A pharmaceutical composition according to Claim 79, comprising a pharmaceutically acceptable adjuvants, carriers or excipients.

94. A pharmaceutical composition according to Claim 93,

80

wherein the support comprises a diluent, sterile aqueous media and non-toxic solvents.

95. A pharmaceutical composition according to Claim 79, wherein the composition is an aqueous solution, an aqueous  
5 suspension, and injectable solution.

96. A pharmaceutical composition according to Claim 95, wherein the composition comprises at least one emulsifying agent, colorant, preservative or stabilizer.

97. A pharmaceutical composition according to Claim 91,  
10 wherein the composition is an aqueous or non-aqueous solution or suspension.

add  
B'

add  
C'

add  
D'

add  
E'